

GURTSKAYA, Sh.A.

Lymphatic vessels in the area of the postoperative cicatrix
of the small intestine. Eksp. khir. i anest. 8 no.5:40-42

S-D '63.

(MIRA 17:6)

1. Laboratoriya fiziologii (zav.- prof. T.I. Kiplani)
Instituta kurortologii (direktor - prof. A.L. Grigoliya)
Ministerstva zdavookhraneniya Abkhazskoy ASSR i kafedra
klinicheskoy anatomii i operativnoy khirurgii (zav.-
chlen-korrespondent AMN SSSR prof. B.V. Ogniev) TSentral'-
nogo instituta usovershenstvovaniya vrachey.

BYKOV, Kh.I.; GURULEV, A.K., mashinist; CHIRKUNOV, A.G., inzh.-tekhnolog

More discussion concerning the ERI electric train. Elek. i tepl.
tiaga 6 no.8:28-30 Ag '62. (MIRA 17:3)

1. Mashinist-instruktor depo im. Il'icha Moskovskoy dorogi (for Bykov). 2. Depo Leningrad-Passazhirskiy-Moskovskiy Oktyabr'skoy dorogi (for Chirkunov).

GURULEV, S.A.

Multiple Quaternary glaciation of the Barguzin Range. Izv. vys.
ucheb. zav.; geol. i razv. no.2:33-37 P '58. (MIRA 11:6)

1. Irkutskiy gosudarstvennyy universitet im. A.A. Zhdanov.
(Barguzin Range--Glacial epoch)

GURULEV, S.A.

"Manual on mineralography" by S.A. Vakhromeev. Reviewed by S.A. Gurulev. Izv. vys. ucheb. zav.; geol. i razv. i no.10:135-137 0 '58.

(MIRA 12:9)

(Mineralogy) (Vakhromeev, S.A.)

GURULEV, S.A.

Some characteristics of the geology and nickel potential of the
northwestern marginal part of the Ioko-Dovyren ultrabasic massif
(northern part of the Lake Baikal region). Krat.soob. ~~IX~~ XII no.3:
34-39 '62. (MIRA 16:5)

(Baikal Lake region--Ultrabasicite)
(Baikal Lake region--Nickel ores)

MANUYLOVA, Mariya Mikhaylovna; VAS'KOVSKIY, Dmitriy Petrovich;
GURULEV, Stanislav Andreyevich; VELIKOSLAVINSKIY, D.A.,
kand. geol.-miner. nauk, otv. red.

[Geology of the Pre-Cambrian in the northern part of the
Lake Baikal region] Geologiya dokembrii Severnogo Pri-
baikal'ia. Moskva, Izd-vo "Nauka," 1964. 225 p.
(MIRA 17:8)

GURULEV, S.A.; VOROB'YEVA, O.A., doktor geol.-miner. nauk,
otv. red.

[Geology and conditions governing the formation of the
Ioko-Dovyren gabbro-periodotite massif] Geologiya i
usloviia formirovaniia Ioko-Dovyrenskogo gabbro-periodo-
titovogo massiva. Moskva, Nauka, 1965. 120 p.
(MIRA 18:4)

GUNDELAV, S.A.

Post Lower Cambrian intrusions of the Harguwin Range. Trudy
BKNII no.9:12-25 '62 (MLRA 18:2)

GURULOV, S.P.

Disthene crystalline schists and their diaphthorites in the Tyva basin (northern part of Lake Baikal region). Geol. i geofiz. no.3:5-56 '84 (MIRA 18:2)

1. Buryatskiy kompleksnyy nauchno-issledovatel'skiy institut Sibirskogo otdeleniya AN SSSR, Ulan-Ude.

GERMAN, A.S.; AL TARK, L.S.; LINDHOLM, H.S.; KAPITANOV, N.I.

Find of blue Siopside in Siberia. Dokl. AN SSSR 163 no.2:446-446 J1
'65. (MIRA 18:7)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR.
Submitted March 9, 1965.

GURULEV, Yu.G.

Complex ore deposit in an arenaceous-shale formation. Trudy VIKR
no.4:269-277 '61. (MIRA 14:9)

(Ore deposits)

AYZENBERG, A.I.; KOPYTOV, Yu.A., starshiy nauchnyy sotrudnik; GURULEVA,
N.M., mladshiy nauchnyy sotrudnik

Comparison of frontal frame dogging carriages based on the
time of completing auxiliary operations. Trudy VSNIPILesdrev
no.9:18-21 '64. (MIRA 18:11)

TSEET, A.I.; SKOROBOGATOVA, V.I.; GURULEVA, N.N.

Autoclave oxidation of ferrous sulfate in solution. Trudy Vost.-Sib.
fil. AN SSSR no.25:89-95 '60. (MIRA 13:9)
(Iron sulfate) (Oxidation)

SKOROBOGATOVA, V.I.; TSEFT, A.L.; GURULEVA, N.N.

Oxidation of ferrous sulfate in solutions containing zinc, nickel,
or cobalt. Trudy Vost.-Sib.fil. AN SSSR no.25:96-99 '60.

(MIRA 13:9)

(Iron sulfate)

(Oxidation)

85-58-6-30/43

AUTHORS: Tkachev, V., Vartanov, V., Vasilyan, I., Lagunov, V.,
Lobzhanidze, Z., Guruli, M. (Tbilisi)

TITLE: Tbilisi Model-airplane Builders Need a Field for Flying Cord-
controlled Models (Tbilisskim aviamodelistam nuzhen kortodrom)

PERIODICAL: Kryl'ya rodiny, 1958, Nr 6, p 24 (USSR)

ABSTRACT: The authors urge the construction of a field for flying
cord-controlled airplane models in Tbilisi.

1. Airplanes—Model building

Card 1/1

GURULISHVILI, K.V.

Reduction of poorly field ears in corn. Soob. AN Gruz. SFR 37
no.3:673-680 Mr '65. (MIRA 18:5)

GURMSOV, V.M.

Determining the degree of fiber parallelizing in the course of
flax spinning operations. Izv.vys.ucheb.zav.; tekhn.tekst.prom.
no.1:72-79 '63. (MIRA 16:4)

1. Kostromskoy tekhnologicheskoy institut.
(Spinning) (Flax)

L 18085-63 EWP(q)/EWT(m)/BDS AFTC JD

ACCESSION NR: AP3005311

S/0181/63/005/008/2070/2074

AUTHOR: Gurvenishvili, G. Ye.

TITLE: Combination resonance in deformed p-Ge ^{~1}

SOURCE: Fizika tverdogo tela, v. 5, no. 8, 1963, 2070-2074

TOPIC TAGS: combination resonance, p-Ge, semiconductor, spin-orbital interaction, steady state, electrical vector, electromagnetic wave, magnetic field

ABSTRACT: It is shown that in p-Ge during strong anisotropic deformation it is possible to observe combination resonance when the direction of the electrical vector of the electromagnetic wave coincides with the external magnetic field. The treatment is mathematical, with consideration of wave functions, energy levels, the Hamiltonian, and deformation potential. For simplicity, only deformation in the [001] direction was examined, but it is stated that combination resonance will exist for deformation in other directions. It is concluded that the phenomenon will also take place in p-Si, but the computations for this will be more difficult. "The author expresses his thanks to G. R. Khutsishvili for useful discussions and valuable advice." Orig. art. has: 1 figure and 13 formulas.

Card 1/2

Institute of Physics, Academy of Sciences, Georgian SSR

GURVICH, A., kand.med.nauk

There is such a thing as "water of life." IUn.tekh. 5 no.9:14-17 S
'60. (MIRA 13:10)

(CARDIAC RESUSCITATION)

GURVICH, A.A.

Mitogenic studies of the neuromuscular system as a method for the analysis of its molecular substrate. Report No. 1: Analysis of antidromic processes of interaction and the degree of their distribution. Biul. eksp. biol. i med. 49 no. 5:67-71 My '60.
(MIRA 13:12)

1. Iz kabine/a mitogeneza Instituta normal'noy i patologicheskoy fiziologii (dir. - deystvitel'nyy chlen AMN SSSR V.N. Chernigovskiy) AMN SSSR, Moskva. Predstavlena deystvitel'nyy chlenom AMN SSSR V.N. Chernigovskim.

(NERVOUS SYSTEM)

GURVICH, A.A.

Mitogenic irradiation of the neuromuscular system as a method for analyzing its molecular substrate. Report No.2: Application of the concept of regulation to the molecular substrate of the muscle in a state of rest. Biul. eksp. biol. i med. 50 no.10:82-86 0 '60.

(MIRA 14:5)

1. Iz kabineta mitogeneza Instituta normal'noy i patologicheskoy fiziologii (dir. - deystvitel'nyy chlen AMN SSSR V.N.Chernigovskiy) AMN SSSR, Moskva. Predstavlena deystvitel'nym chlenom AMN SSSR V.N.Chernigovskim.

(ELECTROPHYSIOLOGY)

(MUSCLES)

GURVICH, A.A.; YEREMEYEV, V.F.; LIPKIND, M.A.

Mitogenic irradiation of the neuromuscular system as a method for the analysis of its molecular substrate. Report No.3: Regulatory effect of spinal centers on the molecular substrate of muscles in animals of various ages and the role of the regulation in muscle metabolism. Biul. eksp. biol. i med. 51 no.4:57-61 Ap '61. (MIRA 14:8)

1. Iz kabineta mitogeneza (zav. A.A.Gurvich) Instituta normal'noy i patologicheskoy fiziologii (dir. - deystvitel'nyy chlen AMN SSSR V.V.Parinym.

(SPINAL CORD)

(MUSCLE)

(CELL DIVISION (BIOLOGY))

GURVICH, A.A.

Mitogenic studies on the neuromuscular system as a method for the analysis of its molecular substrate. Report No.4: Demonstration of regulation potentials in muscle molecular substrates in various functional conditions. Biul. eksp. biol. i med. 51 no.5:68-73 My '61. (MIRA 14:8)

1. Iz kabineta mitogeneza (zav. - doktor biologicheskikh nauk A.A. Gurvich) Instituta normal'noy i patologicheskoy fiziologii (dir. - deystvitel'nyy chlen AMN SSSR V.V.Parin) AMN SSSR, Moskva. Predstavlena deystvitel'nym chlenom AMN SSSR A.V.Lebedinskim. (MUSCLE)

GURVICH, A.A.

Mitogenic irradiation of the neuromuscular system as a method
for the analysis of molecular substrates and of the concept
of excitability. Trudy Inst.norm.i pat.fiziol. AMN SSSR 7:39.
40 '64. (MIRA 18:6)

1. Kabinet mitogeneza (zav. - doktor biolog. nauk A.A.Gurvich)
Instituta normal'noy i patologicheskoy fiziologii AMN SSSR.

GURVICH, A.A.

Relation between the problem of mitogenetic regulation and modern trends in biophysical studies. Biofizika 10 no.4:619-624 '65.

(MIRA 18:8)

1. Institut normal'noy i patologicheskoy fiziologii ANU SSSR.

GURVICH, A.A.; YEREMEYEV, V.F.

Mitogenetic radiation as chemiluminescence. Interrelation
between fluorescence processes and those similar to phos-
phorescence in living systems. Trudy MSIP. Otd. biol.
21:135-141 '65. (MIRA 18:6)

GURVICH, A. B.

"Mitogenetic Radiation," 3rd edition, Moscow, 1945

GURVICH, A. B. et al.

"The Theory of a Cancer Extinguisher," Moscow, 1947

GURVICH, A. B.

"An Introduction to the Theory of Mitogenesis," 4th edition, Moscow, 1948

MIKHLIN, E.D.; CURVICH, A.I.; CHUKAYEVA, V.N.

Method for determining small amounts of acetone in oils. Trudy
VNIVI 8:103-104 '61. (MIRA 14:9)

1. Laboratoriya po tekhnologii pererabotki prirodnogo syr'ya
Vsesoyuznogo nauchno-issledovatel'skogo vitaminного instituta.
(Acetone) (Oils and fats--Analysis)

GURVICH, Anatoliy Konstantinovich; ACHKINADZE, Sh.D., red.; GVIRTS, V.L.,
tekh.n.red.

[Device for measuring depth of flaws by means of impulse ultrasonic
defectoscopes] Pribor dlia izmereniia glubiny zaleganiia defekta
pri impul'snoi ul'trazvukovoi defektoskopii. Leningrad, 1956.
13 p. (Leningradskii dom nauchno-tekhnicheskoi propagandy. Infor-
matsionno-tekhnicheskii listok; no.14. Kontrol' kachestva produktsii)
(MIRA 10:12)
(Ultrasonic waves--Industrial applications)

which are even beyond the scope of gamma-radiography.
The effectiveness of the defectology method is two to four
times higher than that of the X-ray method and three to five
times higher than that of gamma-radiography. — R. 2.

Subject : USSR/Engineering AID P - 5422
Card 1/1 Pub. 11 - 12/13
Author : Gurvich, A. K.
Title : Ultrasonic inspection of quality of angular welded joints.
Periodical : Avtom. svar., 5, 84-89, My 1956
Abstract : The ultrasonic method for inspection of angular, cross and Tee-shaped welded joints and the equipment used for the purpose are described and illustrated. Four macro-pictures, 3 drawings and 2 nomograms.
Institution : Scientific Research Institute of Bridges of the Leningrad Railroad Engineers Institute (NII mostov pri LIIZhT).
Submitted : No date

AID P - 4511

Subject : USSR/Engineering

Card 1/1 Pub. 11 - 9/12

Author : Gurvich, A. K.

Title : Ultrasonic Detection of Defects in Butt-welded Seams

Periodical : Avtom. svar., 2, 68-75, Mr/Ap 1956

Abstract : The methods of ultrasonic detection of defects in butt-welded seams and the equipment used are described including gages, which permit efficient and precise ultrasonic control. The results of experiments and some practical recommendations are given. Two formulae, 3 drawings, 1 nomographic chart and 2 photos. 2 Russian references (1955).

Institution : Institute of Bridges of Ministry of Railways

Submitted : D 22, 1955

AUTHOR:

Gurvich, A.K.

32-7-30/49

TITLE:

An Apparatus for the Ultrasonic Defectoscopy of Welding Seams
(Apparatura dlya ul'trazvukovoy defektoskopii svarnykh shvov)

PERIODICAL:

Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 7, pp. 858 - 860 (USSR)

ABSTRACT:

The principle of this device consists in sounding the entire metal volume of welding by means of the pulses of ultrasonic oscillations, in the recording of the reflexes of these pulses, and the determination of the coordinate of the reflecting surface. Sounding is carried out by means of the ultrasonic beam of a prismatic tactile device (feeler), which carried out the function of radiation and recording pulses. During the test this feeler moves in a zig-zag form along the welding seam. One of the angles of introduction of this feeler is 45° , the other 70° . The amount of its displacement is determined by means of a nomogram. By means of defectoscopes of the type "N.I.I.M.-2,3" it is possible to detect welding faults, cracks, porosities, as well as slags. The apparatus may be used immediately on the spot where work is carried out. This method of ultrasonic defectoscopy is 2 - 4 times as economical as the radiographic method, and 3 - 5 times more eco-

Card 1/2

32-7-30/49

An Apparatus for the Ultrasonic Defectoscopy of Welding Seams

nomical than the method of gamma defectoscopy. For purposes of control it is advisable to use both methods: the ultrasonic method and the method of gamma defectoscopy. There are 3 figures.

ASSOCIATION: Scientific Research Institute for Bridge Construction
(Nauchno-issledovatel'skiy institut mostov)

AVAILABLE: Library of Congress

Card 2/2

S/112/60/000/006/022/032

Translation from: Referativnyy zhurnal, Elektrotehnika, 1960, No. 6, p. 392,
5.3099

AUTHOR: Gur'vich, A. K.

TITLE: Development of Ultrasonic Equipment for Quality Inspection of
Welded Joints ²¹ ₁₄

PERIODICAL: Tr. Seminara po fiz. i primeneniyu ultrazvuka, posvyashch. pamyati
prof. S. Ya. Sokolova, Leningrad, 1958, pp. 109-116

TEXT: The author describes a pulse ultrasonic flaw detector "~~УЗ-ННМ-5~~" (LD-NM) ²⁸
(developed by the Scientific-Research Institute for bridges) designed for the
detection of internal defects in metal objects and welded joints. Working
frequencies are 1.8, 2.5, 3.2 Mc; the area of the smallest detectable defect is
2 mm². Defects are shown on the screen of a cathode-ray tube, by lighting of a
lamp on the feeler or by an audible signal in headphones. Possible methods of
automating the welded joint inspection are discussed: a) by mechanical scanning
with recording on paper; b) by using a mosaic feeler, each element of which

Card 1/2

S/112/60/000/006/022/032

Development of Ultrasonic Equipment for Quality Inspection of Welded Joints

alternately radiates and receives pulses, whereby the defects are indicated on the screen of the "УЗД-НИИМ-2" (UZD-NIIM-2) flaw detector tube with television scanning; c) by the method of a rocking beam.

Yu. Ya. B.

✓

Card 2/2

AUTHOR: Gurvich, A.K., Candidate of Technical Science 125-58-6-12/14

TITLE: The "UZD-NIIM-5" Ultrasonic Flaw Detector for Controlling the Quality of Weld Seams (Ul'trazvukovoy defektoskop UZD-NIIM-5 dlya kontrolya kachestva svarnykh shvov)

PERIODICAL: Avtomaticheskaya Svarka, 1958, Nr 6, pp 92 - 93 (USSR)

ABSTRACT: The Institut mostov pri LIIZHTE (Institute ^{for} Bridges, attached to LIIZHTE), has designed a new type ultrasonic flaw detector based of previous models (the UZD-NIIM-2 and UZD-NIIM-3). It detects inner defects and determines their location in metal structures and weld seams. The device is described. There is 1 photograph and 1 Soviet reference.

ASSOCIATION: NII mostov pri LIIZHTE (Scientific Research Institute for Bridges attached to LIIZHTE)

SUBMITTED: January 24, 1958

AVAILABLE: Library of Congress
Card 1/1 1. Seam welding-Quality control

GURVICH, H.K.

AUTHOR: Dianov, D. B.

4E-4-1-17/23

TITLE: Seminar on Physics and Application of Ultrasound, Dedicated to the Memory of S.Ya. Sokolov, a Corresponding Member of the Academy of Sciences of the USSR. (Seminar po fizike i primeneniyu ul'trazvuka, posvyashchenny pamyati chlena-korrespondenta AN SSSR S.Ya. Sokolova.)

PERIODICAL: Akusticheskiy Zhurnal, 1958, Vol.IV, Nr.1, p.104. (USSR)

ABSTRACT: A Seminar on Physics and Applications of Ultrasound, dedicated to the memory of S. Ya. Sokolov, was held on 23-26th October, 1957, in Leningrad Electro-Technical Institute imeni V.I. Ul'yanov (Lenin). More than 100 scientists and engineers from Leningrad, Moscow and other towns took part in this seminar. Sokolov's scientific work on ultrasound was described by G.V. Odintsov and E.S. Sokolova; and L.L. Myasnikov and S.N. Rzhavkin described their personal contacts with Sokolov. A large group of papers dealt with "ultraacoustoscopy", the subject which was developed by Sokolov. L.G. Merkulov, N.A. Yevdokimov and

Card 1/3

Seminar on Physics and Application of Ultrasound, Dedicated
to the Memory of S.Ya. Sokolov 46- 4.1-17/23

A.S. Golubev, in their paper on "Ultrasonic Methods of Studies of Solids" described Sokolov's and his co-workers' work on ultrasonic testing for defects. A.K. Gurvich spoke on "Further Development of Ultrasonic Apparatus for Quality Control of Welded Joints"; B.N. Masharskiy reported on defect tracing by change of frequency and use of standard defects; transmission of ultrasound across a boundary between two solids was described by B.D. Dianov; V.V. Bogorodskiy and I.V. Zashchuk reported the results of ultrasonic measurement of properties of ice and concrete respectively. The subject of making acoustic field visible was dealt with in papers by V.G. Prokhorov - "On Transformation of an Ultrasonic into a Visible Image" (electron-acoustic convertors), P.V. Ponomarev (use of piezo-electric mosaics), and Ye.D. Pigulevskiy (convex images in liquids). Ultrasonic absorption in liquids was dealt with by B.B. Kudryavtsev in "Use of Ultrasonic Measurements in Physico-Chemical Studies". V.F. Nozdrev reported measurements of critical constants using ultrasonics, and S.A. Balyan spoke on propagation

Card 2/3

Seminar on Physics and Application of Ultrasound, Dedicated
to the Memory of S.Ya. Sokolov. 40-4-1-17/23

of ultrasound in reacting liquids. Measurement of ultrasound velocity and absorption were dealt with in papers by V.F. Nozdrev, V.F. Yakovlev, N.I. Koshkin ("Development of Professor S.Ya. Sokolov's Ideas on Pulse Technique in the M.O.P.I Laboratory"), I.G. Mikhaylov ("Application of a Piezoelectric Quartz Wedge to Measurement of Absorption in Liquids"), V.A. Solov'yev ("Application of a Composite Piezoelectric Vibrator in the Study of Polymers"), and G.N. Feofanov ("Measurement of Velocity of Propagation of Ultrasonic Waves in Liquids using the Method of Pulse Interferometry"). Two papers on the effect of ultrasonics on crystallization were read: I.I. Teufin on "The Effect of Elastic Vibrations on Crystallization and on Technical Properties of Metals and Alloys", and Kh.S. Bagdasarov on "The Effect of Ultrasonic Vibrations on Crystallization Processes."

Card 3/3 1. Physics--Conference 2. Ultrasound--Applications 3. Ultra-
acoustoscopy

AUTHOR: Gurvich, A.K.

32-3-32/52

TITLE: The Development of Ultrasonic Apparatus for Controlling the Quality of Welding Joints (Razvitiye ul'trazvukovoy apparatury dlya kontrolya kachestva svarnykh soyedineniy)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 3, pp. 342-346 (USSR)

ABSTRACT: Ultrasonic defectoscopy can be carried out by means of automatic and hand-controlled apparatus. Automatic control can be carried out by the method of "longitudinal-transversal shifting of the sounding borer", the method of the "pursuing ray", and the method of the "oscillating ray". In the case of the first method the sound ray is directioned at a certain angle into the sample under investigation; here the sounding borer consists of a mosaic of piezoelectric foils and radiation is effected by means of a longitudinal-transversal motion. This control method is suited for welding joints of medium thickness, while for thicker layers and angular joints several sounding borers must be used, which complicates investigation. With the second method of investigation the sound ray is applied and emitted like in the case of the above

Card 1/3

The Development of Ultrasonic Apparatus for Controlling
the Quality of Welding Joints

32-3-32/52

method, but by successive switching over of receiving- and emitting elements a "re-shuffle" of the entire investigation volume is attained with the sounding borer at rest. For this purpose a special type of sounding borer was developed in co-operation with chief engineer A.S. Kukli. This method of control is inferior to that described above and may be employed for the purpose of controlling seams of small dimensions. The "oscillating" ray method is distinguished from the above methods by the fact that the angle of incidence varies continually while the sound ray is being introduced, and that the sounding borer moves in a longitudinal direction and the ray oscillates. This method is recommended for the control of defects of both kinds of welding joints, both medium and large, for which the two previously mentioned methods were found insufficient. In 1957 the defectoscope УЗД-НИИМ-5 was developed by the Scientific Research Institute for Bridges; it operates in accordance with the two first-named methods. The device is fitted with an electron magnifier, the maximum depth of radiation

Card 2/3

The Development of Ultrasonic Apparatus for Controlling
the Quality of Welding Joints

32-3-32/52

is 1 meter. Schematic drawings showing individual types of
sound radiation and some detailed explanations are given. There
are 4 figures, and 6 references, 5 of which are Slavic.

ASSOCIATION: Scientific Research Institute for Bridges (Nauchno-
issledovatel'skiy institut mostov)

AVAILABLE: Library of Congress

1. Welding-Quality control-Device

Card 3/3

58211

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18.8400

~~20 (5)~~

AUTHOR:

Gurvich, A. K.

S/032/60/026/01/022/052
B010/EOO

TITLE:

Production of Visible Pictures of the Cross Sections of a
Weld Seam on Ultrasonic Detection of Defects

PERIODICAL:

Zavodskaya laboratoriya, 1960, Vol 26, Nr 1, pp 64 - 68 (USSR)

ABSTRACT:

A precise method for the determination of size and shape of defects by investigating the visible-picture photographs of the cross section of the defect weld seam on automatic control by means of ultrasonics is described. To produce this picture, the lines of rays are reproduced on the screen of the electron tube at the same angle at which the ultrasonics entered the metal to be controlled (Fig 1). The ratio between the reproduced picture and the length of the ultrasonic ray in the metal part under investigation is chosen according to the ratio of the diameter of the screen to the thickness of the weld seam as well as to the angle of incidence of ultrasonics. On shifting the test rod, a special device synchronously shifts the beginning of the lines in the picture along the horizontal in the same ratio. The picture is rendered visible by an electron tube with long-lasting phosphorescence. If a defect appears, the

Card 1/3

68211

Production of Visible Pictures of the Cross Sections of a Weld Seam on Ultrasonic Detection of Defects S/032/60/026/01/022/052 B010/E001

luminosity of that spot decreases. A block for automatical photographing which takes only the picture of the defect cross sections is used. The quality of the reproduction of the defect depends on the sensitivity of the crack detector, the kind and position of the defect, and the quality of the acoustic contact of the detector. The accuracy of determination decreases if non-standardized impulses are used (Fig 3). The distortion of the visible picture of the defect is proportional to the diameter, the deviation angle ψ , and the angle of incidence α of the ultrasonic ray (Fig 4). The above method was tested by a device with a crack detector of the type UZD-NIIM-2m (Reference). Steel samples with artificial defects in weld seams (40 mm thick) were used. The cross section was reproduced on a scale of 1 : 2. The method was well reproducible and sufficiently sensitive. Wrong reproductions of defects, caused by secondary reflexes, may appear, however, if defects are too close together and too sensitive. There are 5 figures and 2 Soviet references.

Card 2/3

68211

Production of Visible Pictures of the Cross
Sections of a Weld Seam on Ultrasonic Detection
of Defects

S/032/60/026/01/022/052
B010/B001 ✓

ASSOCIATION: Nauchno-issledovatel'skiy institut mostov (Scientific
Research Institute of Bridges)

Card 3/3

PIGULEVSKIY, Yevgeniy Dmitriyevich; GURVICH, A.K., inzh., red.;
GVIRTS, V.L., tekhn.red.

[Ultrasonic microscopy; verbatim record of a lecture] Ul'tra-
zvukovaya mikroskopiya; stenogramma lektsii. Leningrad, 1959.
(MIRA 14:1)

(Microscope and microscopy)
(Ultrasonic waves--Industrial applications)

S/032/60/026/009/006/018
B015/B058

AUTHOR: Gurvich, A. K.

TITLE: Influence of the Medium on the Sensitivity of the Method
of Determining Material Defects by Means of Ultrasonics

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol. 26, No. 9,
pp. 1102 - 1103

TEXT: When investigating welded joints by means of acoustic irradiation from prismatic sound generators, reflected sound waves are measured, allowance having to be made for the fact that a reduction of the sound-wave intensity and consequently of the control sensitivity takes place at every reflection from the metal surface. The influence of the purity of surface and medium surrounding the metal on the sensitivity was investigated in the present case. Samples of steel and duralumin were used, the surface of which was machined or unmachined after rolling. The surface of the sample was dry in the first case and coated with water or oil in the second case. Investigations showed that the reduction of sensitivity mainly depends on the acoustic properties of the

Card 1/2

Influence of the Medium on the Sensitivity of S/032/60/026/009/006/018
the Method of Determining Material Defects by B015/B058
Means of Ultrasonics

metal and medium and is not appreciably influenced by the surface purity. The change of the amplitude of the echo signals (i.e., of sensitivity) from the number of reflexes at metal surfaces wetted with oil and at immersion in water, respectively, shows (Fig. 2, diagrams) that the contact liquid from the metal surface and the liquid filled in containers and tubes must be removed during the sound control in order to increase sensitivity. There are 2 figures.

ASSOCIATION: Nauchno-issledovatel'skiy institut mostov pri Leningradskom
institute inzhenerov zheleznodorozhnogo transporta
(Scientific Research Institute of Bridges at the Leningrad
Railroad Engineers Institute)

Card 2/2

GURVICH, A.K.

Scientific Technological Conference on the Quality Control of
Welding and Hard Facing in Railroad Transportation. Avtom.svar. 14
no.9:95-96 S '61. (MIRA 14:8)
(Welding - Quality control)

S/275/63/000/002/025/032
D405/D301

AUTHOR: Gurvich, A.K.

TITLE: Ultrasonic equipment for quality control of metal structures

PERIODICAL: Referativnyy zhurnal, Elektronika i ee primeneniye, no. 2, 1963, 24, abstract 2V147 (Ul'trazvuk v stroit. tekhn., M., Gosstroyizdat, 1962, 170-176 (Collection)

TEXT: The specific features of, and the circuits used in ultrasonic control of welded joints are described, as well as portable flaw detectors developed for that purpose: УЗД-ННММ-5 (UZD-NIIM-5) (for factory and field conditions) and УЗД-ННММ-3 (UZD-NIIM-3) (for control in poorly accessible sites). Various methods of automatic control of welded joints are considered. 5 references, 3 figures.

[Abstracter's note: Complete translation]

Card 1/1

1. 2000

37670
S/125/62/000/004/003/C13
D040/D113

AUTHOR: Curvich, A.K.

TITLE: Ultrasonic flaw detection studies in butt welds of AMg6 aluminum alloy

PERIODICAL: Avtomaticheskaya svarka, no. 4, 1962, 54-56

TEXT: Data is given on the first ultrasonic flaw detection experiments in butt weld joints of AMg6 (AMg6) duralumin. Single pores, agglomerations of pores \sim 0.05 mm in diameter, cold shuts, cracks, oxide films, tungsten or tungsten oxide inclusions are the typical flaws in such joints. Welds in 10-30 and 20-40 mm thick elements were studied with prismatic feelers with a plexiglass prism, such as used for flaw detection in steel. As it is known that in steel the real refraction angle α slightly differs from the theoretical, the propagation of the transverse wave in AMg6 was measured at 30, 40 and 50° incidence angles of longitudinal wave (feeler angle). The difference between propagation in steel and duralumin was small, and the

Card 1/3

Ultrasonic flaw detection studies ...

8/125/62/000/004/002/013
D040/0113

intensity of the transverse wave depends on the incidence angle. Scratches, depressions and protrusions on the surface reduced the determination sensitivity by 9÷25%. X-ray investigations carried out in order to check the accuracy of ultrasonic detection, revealed only pores and large cold shuts; oxide films, cold shuts in the weld root, and accumulations of small pores were left undetected. It is recommended to use standard feelers with 40 and 50° prism angles; a 50° angle gave the most constant indications, while feelers with smaller angles frequently produced reflection pulses from the surface and the contact medium. All flaws detected by ultrasound were later found in fractures of the joints. Conclusions: (1) Ultrasonic flaw detection must be used as an independent method; the use of X-ray and gamma-detection is not advised because of low sensitivity; (2) the YSD-5 (USD-HEIM-5) flaw detectors and a 2.5 Mc frequency can be used for controlling butt welds in aluminum alloys; (3) a feeler with a 50° incidence angle is recommended for sounding 10-40 mm thick welds; the technique is the same as that used for butt welds in steel; (4) the techniques for evaluating the

Card 2/3

Ultrasonic flaw detection studies ...

3/285/62/000/004/000/013
DO40/2113

weld quality according to the results of ultrasonic flaw detection will have to be finally established after the technical specifications for the welding quality are set up. There are 2 figures.

ASSOCIATION: Nauchno-issledovatel'skiy institut mostov LIIZhTa (Scientific Research Institute of Bridges, LIIZhT)

SUBMITTED: July 21, 1961

Card 3/3

AM4027872

BOOK EXPLOITATION

8/

Gurvich, Anatoliy Konstantinovich (Engineer)

Ultrasonic weld testing (Ul'trazvukovaya defektoskopiya svarny*kh soyedineniy) Kiev, Gostekhizdat USSR, 63. 0227 p. illus., biblio. 1,800 copies printed.

TOPIC TAGS: flaw detection, deflectoscopy, welded joints, ultrasonic flaw detection, butt weld, fillet weld, contact weld, automatic weld flaw detection

PURPOSE AND COVERAGE: The book contains the necessary information on the principles of ultrasonic flaw detection, a procedure for the control of different welded seams, and also problems in the operation and construction of specialized apparatus. Methodological indications which can be used in manufacturing practice are given. Particular attention is paid to standardization of the method of ultrasonic flaw detection and the combination of this method with

Card 1/3

AM4027872

other control methods, and also to the problem of automatization of the process of ultrasonic control and photography of the disclosed flaws. The book is intended for workers in industry who employ the method of ultrasonic quality control of welds, and also for engineers and technicians engaged in the development of procedures and apparatus for manual and automatic ultrasonic control.

TABLE OF CONTENTS [abridged]:

Foreword - - 3

Ch. I. General information on ultrasonic waves - - 5

Ch. II. General premises of ultrasonic flaw detection of welded joints - - 20

Ch. III. Ultrasonic apparatus for quality control of welded joints - - 61

Ch. IV. Ultrasonic flaw detection of butt welds - - 121

Card 2/3

AM4027872

- Ch. V. Ultrasonic flaw detection of fillet welds - - 135
- Ch. VI. Ultrasonic flaw detection of contact welds - - 153
- Ch. VIII. Automatic ultrasonic control of welded seams by the method of longitudinal and transverse displacement of the probe - - 179
- Ch. IX. Automatic ultrasonic control of welded seams by longitudinal-transverse displacement of the probe - - 186
- Ch. X. Automatic ultrasonic control of welds by the "Scanning" beam method - - 206
- Ch. XI. Automatic ultrasonic control of seams by the rocking beam method - - 215
- Literature - - 222

SUB CODE: AP, MA

SUBMITTED: 21Aug63

NR REF SOV: 065

OTHER: 012

DATE ACQ: 05Mar64

Card 3/3

KOZLOV, V.B.; LYSENKO, I.M.; MATVEYEV, A.N.; TRAKHTENBERG, M.V.;
USPENSKIY, Ye.I.; GURVICH, A.K.; BESPALOV, B.N., inzh.,
retsenzent; SPASSKIY, D.S., inzh., red.; MEDVEDEVA, M.A.,
tekhn. red.

[Flaw detection in realls] Rel'sovaia defektorskopiia. [By]
V.B.Kozlov i dr. Izd.2., perer. i dop. Moskva, Transzhel-
dorizdat, 1963. 286 p. (MIRA 16:8)

(Railroads--Rails--Defects)
(Nondestructive testing)

3/125/63/000/003/012/012
AOC6/A101

AUTHORS: Gurvich, A. K., Kuz'mina, L. I.

TITLE: The Conference on ultrasonic flaw-detection

PERIODICAL: Avtomaticheskaya svarka, no. 3, 1963, 94 - 95

TEXT: The Conference on ultrasonic flaw-detection was held in Leningrad in October 1962. The Conference was opened by Pro-rector of LIIZhT, M. M. Filippov, who noted the wide use of ultrasonic flaw-detection for the quality control of weld joints. The following reports were heard: A. K. Gurvich, NII of Bridges, on standardization of ultrasonic flaw-detection methods and development of GOST standards; N. V. Khimchenko, NII khimmash, on the use of complex flaw-detection under industrial conditions; A. S. Kuklin, NII of Bridges, on the use of the flaw-detection system developed at the NII of Bridges, for individual sections; I. N. Yermolov and A. Z. Raykhan on standardizing the sensitivity of flaw detectors; I. N. Yermolov (TsNIITMASH), V. A. Tsechal' (IIS imeni Ye. O. Paton) and O. N. Zhukov (Leningrad Sovnarkhoz) on the control of ultrathick welds; S. A. Pikulin (Kommunarsk Metallurgical Plant) on the combined use of

Card 1/2

The Conference on ultrasonic flaw-detection

S/125/63/000/003/012/012
A006/A101

ultrasonic flaw-detection and roentgenography in weld control of steelteeming ladles; V. P. Pushkin, Orgenergostroy, Yu. S. Zakharov, OREGRES, and Yu. V. Levitskiy, Donbassenergo, on ultrasonic flaw-detection of steam pipes; Ya. F. Anikeev on ultrasonic weld control of thin-walled pipes; L. D. Kevesh, G. I. Zeytman, Krasnyy kotel'shchik Plant, V. B. Rogozhkin and A. A. Posedkin, Noril'sk Combine of Mining and Metallurgy, on experience in ultrasonic flaw-detection of welds; F. Ya. Zaslavskiy, B. M. Petrov, Plant imeni Nosenko, A. P. Leonova, Baltic Plant, on ultrasonic flaw-detection in shipbuilding; A. G. Dzhabiyev, AzINmash, on ultrasonic flaw-detection of 9 - 14 mm thick butt welds in heat-exchangers; V. A. Bos'ko, Nikolayev Shipbuilding Institute, on improved reliability of ultrasonic flaw-detection by means of 5 megacycle oscillations and probes with special traps; A. A. Khanonkin, Odessa Ship Repair Plant, on the control of thin welds by single and double probe systems. The Conference stressed the necessity of standardizing ultrasonic flaw-detection methods, investigating new methods, and of automating and mechanizing the control process.

Card 2/2

GURVICH, A.K.; KUZ'MINA, L.

Scientific and Technical Conference on the Use of Ultrasonic
Defectoscopy and Radiographic Inspection in the Quality
Control of Welded Joints. Zav. lab. 29 no.6:766-767, '63.
(MIRA 16:6)

(Ultrasonic testing—Congresses)
(Welding—Testing)

L 45393-65 EWP(c)/EWA(h)/EWP(k)/EWT(d)/EWT(1)/T/EWP(1)/EWT(v) 11-1/pab

ACCESSION NR: AP5010942

UR/0284/65/000/007/0125/0125

AUTHORS: Dmitriyev, V. A.; Gurvlch, A. K.; Gradov, V. A.

22
B

TITLE: Ultrasonic automatic flaw detector for inspecting rails laid in a track.
Class 42, No. 169858

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 7, 1965, 125

TOPIC TAGS: railroad track, flaw detector, ultrasonic inspection

ABSTRACT: This Author Certificate presents an ultrasonic automatic flaw detector for inspecting rails laid in a track, containing a number of ultrasonic sets in the moving car with test heads located over various parts of the rail surface under investigation, a recorder for recording the flaw signals, and an electro-magnetic device for marking with paint the defective sites on the rail surface. To expose cracks or any other defects in the region of bolt holes and to eliminate spurious signals when crossing welded joints in the rail, one of the ultrasonic heads is in the form of two identical probes placed perpendicular to the rail head surface along its axis at a distance greater than the width of the rail bolt hole (see Fig. 1 on the Enclosure). Orig. art. has: 1 diagram.

ASSOCIATION: none

Card 1/3

L 45393-65

ACCESSION NR: AP5010942

SUBMITTED: 20Sep62

ENCL: 01

SUB CODE: IR

NO REF SOV: 000

OTHER: 000

Card 2/3

L 10211-66 EWT(d)/EWP(c)/EWP(v)/T/EWP(k)/EWP(1)/ETC(m) WH
 ACC NR: AP5028504 SOURCE CODE: UR/0286/65/000/020/0081/0082

AUTHORS: Gurvich, A. K.; Ogryzkov, R. S.

ORG: none

TITLE: An ultrasonic pulse flaw detector. Class 42, No. 175700 [announced by
 Scientific Research Institute of Bridges, Leningrad Institute of Railroad
 Transportation Engineers (Nauchno-issledovatel'skiy institut mostov pri
 Leningradskom institute inzhenerov zheleznodorozhnogo transporta)]

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 20, 1965, 81-82

TOPIC TAGS: flaw detection, ultrasonic flaw detector, pulse generator, periodic
 pulse, voltmeter, pulse amplifier, circuit delay line

ABSTRACT: This Author Certificate presents an ultrasonic pulse flaw detector.
 consisting of an ultrasonic pulse generator, a radiator-rec iver of these
 oscillations, and also an amplifier and time-selection stage. To simplify the
 measurement of the coordinates of defects, the circuit of the flaw detector has
 an auxiliary saw-tooth generator excited by pulses from the main generator through

Card 1/2

UDC: 620.179.16.002.56:621.373

L 10211-66

ACC NR: AP5028504

a delay line (see Fig. 1). It is cut off by an echo signal reflected from a

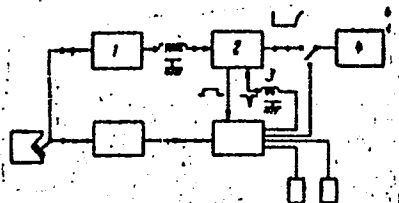


Fig. 1. 1 - Auxiliary generator;
2 - main generator; 3 - delay
line; 4 - voltmeter.

flaw, making it possible to determine the depth of occurrence of flaws from the amplitude of the saw-tooth pulses. The saw-tooth pulses are measured with a peak voltmeter. Orig. art. has: 1 figure.

SUB CODE: 09/4/

SUBM DATE: 13Jan64

Card 2/2

(N) L 11168-66 EWT(d)/EWP(c)/EWP(v)/T/EWP(k)/EWP(L)/ETC(M) WW
ACG NR: AP6000367 SOURCE CODE: UR/0286/65/000/021/0065/0065
AUTHOR: Gurvich, A. K. 44 53
ORG: none
TITLE: Ultrasonic echo flaw detector. Class 42, No. 176116 44,55 14
SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 21, 1965, 65
TOPIC TAGS: ultrasonic flaw detector, ultrasonic inspection
ABSTRACT: This Author Certificate presents an ultrasonic echo flaw detector containing a pulse generator, a receiver, and a selecting circuit. To increase the resolving power of the selecting circuit and to eliminate the effect of the ultrasonic pulse parameters on the accuracy, a converter is used which converts the echo signals into short-width pulses. The leading edge of the pulses coincides in time with the leading edge of the echo signals.
SUB CODE: 13/ SUBM DATE: 18Sep64

Card 1/1

UDC: 620.179.16.05

SHAYBER, David Solomonovich; GURVICH, A.K., red.

[Ultrasonic flaw detection] Ul'trazvukovaia defektoskopiia.
Moskva, Metallurgiiia, 1965. 391 p. (MIRA 19:1)

L 37670-66 EWP(c)/EWP(k)/EWT(d)/T/EWP(l)/EWP(v) IJP(c)

ACC NR: AP6028857

SOURCE CODE: UR/0381/66/000/001/0021/0024

AUTHOR: Kuz'mina, L. I.; Gurvich, A. K.

59

B

ORG: Leningrad Institute of Railroad Transport Engineers im. Academician
V. N. Obraztsov (Leningradskiy institut inzhenerov zh.-d. transporta)

TITLE: Use of punched cards for accumulating and analyzing the results of various
inspection methods 14

SOURCE: Defektoskopiya, no. 1, 1966, 21-24

TOPIC TAGS: punched card, quality control, data analysis, flaw detection, ultrasonic
inspection, railway track, resistance welding

ABSTRACT: A brief description is given of edge-punched cards used for data
analysis in quality control. The notches on the edge of the card are used
for a coded record of the individual characteristics of the inspected object,
methods of flaw detection, results of inspection, etc. The machine used for
sorting the cards is described. The method is illustrated by a detailed
examination of a card for accumulation and analysis of data on ultrasonic
inspection of resistance-welded rails. Orig. art. has: 2 figures. [JPRS: 35,804]

SUB CODE: 09, 13, 14 / SUBM DATE: 09Nov65 / ORIG REF: 001

Card 1/1

UDC: 620.179

ACC NR: AF7002714

(A)

SOURCE CODE: UR/0381/66/000/006/0003/0009

AUTHOR: Gurvich, A. K.

ORG: Scientific Research Institute for Bridges of LIIZhT (NII mostov LIIZhTa)

TITLE: Directivity patterns of inclined sensors

SOURCE: Defektoskopiya, no. 6, 1966, 3-9

TOPIC TAGS: ultrasonic flaw detector, ultrasonic sensor, ultrasonic inspection

ABSTRACT: The author presents general and approximate formulas for the directivity pattern of a sensor used for flaw detection in a solid material by ultrasound, for the case when the main beam of the ultrasound is inclined to the surface of the tested article (steel, aluminum, or copper). The calculations are made for different angles of the prism and for different ratios of the diameter of the radiator to the wavelength. It is shown that the directivity of the field of a transverse wave produced by the inclined sensor in the tested article is determined primarily by the diameter of the radiator, the wavelength, the angle of incidence of the wave, the refractive index of the boundary of the prism with the metal, and the transparency coefficient of this boundary for the transverse wave. The directivity of the elastic field increases with increasing ratio of the diameter to the wavelength and to the refractive index, and also with decreasing prism angle. The smaller the directivity and the closer the principal lobe of the directivity pattern to the critical refraction angles, the larger the influence of the transparency coefficients on the directivity pattern. The transparency of the boundary between the prism and the metal

Card 1/2

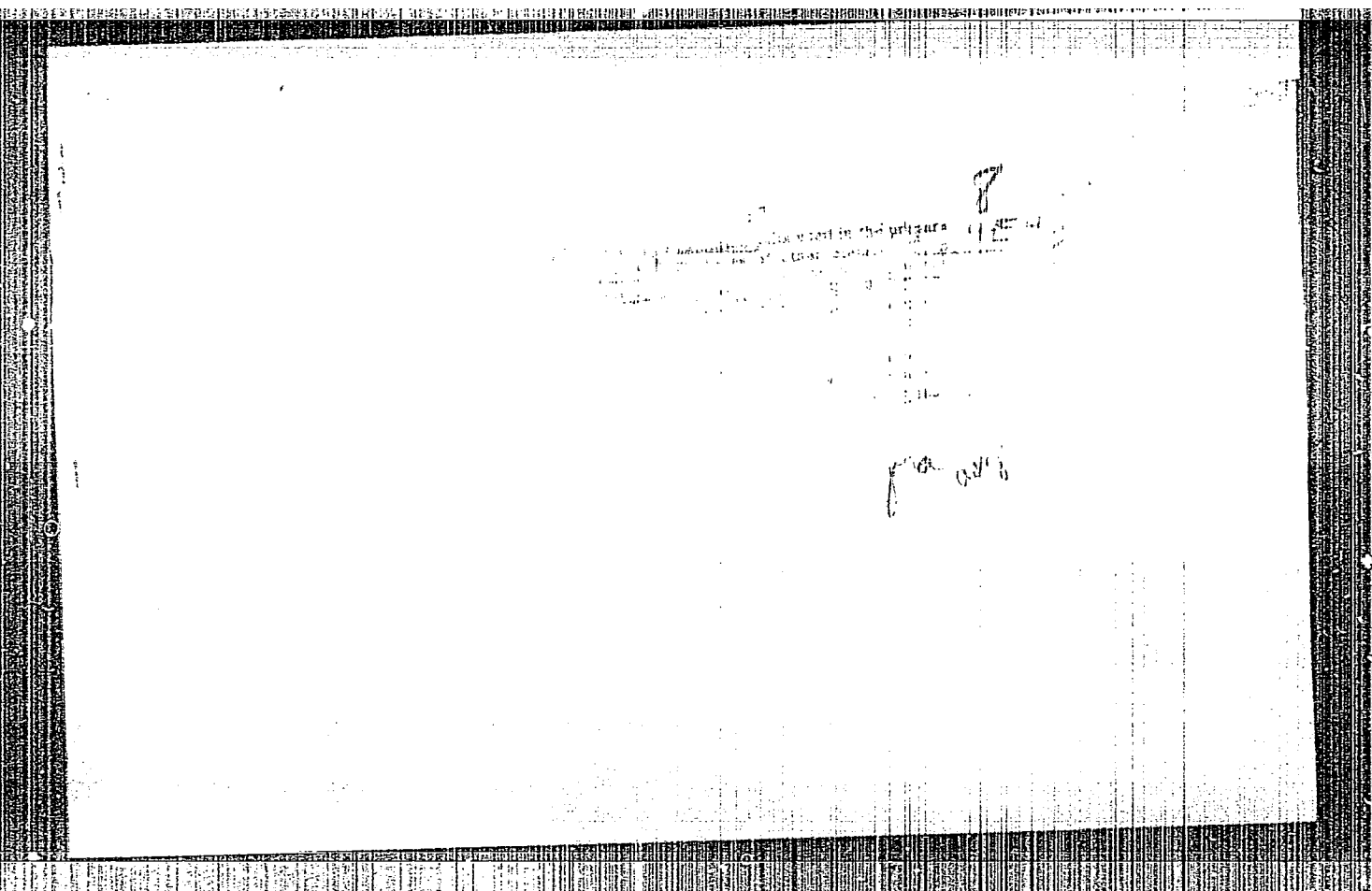
UDC: 620.179.16

ACC NR: AP7002714

can be neglected if the principal lobe does not subtend the region of critical refractive angles. The broader the principal lobe, the larger the deflection of the inclination of the directivity pattern from Snell's angle. The directivity pattern can be approximated with sufficient accuracy by a cosine function. A procedure is proposed for experimentally determining the directivity patterns by measuring and recalculating the envelope of a sequence of echo signals from the probe. Such a procedure gave an experimental accuracy which was sufficiently close to theoretical. Orig. art. has: 5 figures and 8 formulas.

SUB CODE: 14/ SUBM DATE: 30 Jun 66/ ORIG REF: 002

Card 2/2



1963

GURVICH, A. M.

Aleksandr Mironovich

Boilers

DECEASED
c. 1963

GURVICH, A.M.

Automation of charging and discharging operations in semiautomatic
hydraulic copying lathes. Stan.i instr. 29 no.11:13-16 N '58.
(Lathes--Attachments) (Automatic control) (MIRA 11:11)

GURVICH, A. M.

USSR/Analysis of Inorganic Substances

G-2

Abs Jour: Ref Zhur-Khimaya, No 6, 1957, 19589

Author : A. M. Gurvich

Inst : -

Title : Adsorption-Precipitation Chromatographic Method
of Separation of Nickel from Cobalt Using Di-
methylglyoxime.

Orig Pub: Zh. Analit. Khimii, 1956, 11, No 4, 437 - 441.

Abstract: In order to eliminate Ni admixtures from Co salts,
columns containing dimethylglyoxime (I) mixed with
an adsorbent (activated birch charcoal, grain size
0.2 mm in the diameter) are used. The analysed
solution passes through the column and Ni, re-
acting with I before Co, makes the upper zone and

Card 1/3

- 63 -

USSR/Analysis of Inorganic Substances

G-2

Abs Jour: Ref Zhur-Khimaya, No 6, 1957, 19589

continually supplants Co in its combination with I that makes the lower zone. Both the zones grow continually until Co gets through into the filtrate. The Co salt, having saturated the column, passes into the filtrate and does not contain Ni. The lower layer consists of charcoal adsorbing the washed out I dimethylglyoximate of Co. Before the experiment, the column is moistened with water. Oxidisers decrease the efficiency of the method, their large amounts interfere. Co^{2+} can be separated also from Cu^{2+} . In order to discover traces of Ni in Co salts, columns with the mixture of Al_2O_3 and I (1 : 10) were used. When the solution passes through the

Card 2/3

- 64 -

APPROVED FOR RELEASE: 08/10/2001

CIA-RDP86-00513R000617510015-5"

USSR/Analysis of Inorganic Substances

Abs Jour: Ref Zhur-Khimiya, No 6, 1957, 19589

column, a chromatogram consisting of a rose-red zone of Ni and a yellow zone of Co is produced. 0.1 ml of the analysed solution is introduced into the column Al_2O_3 -I and it is immediately washed with 0.2 ml of water. In case the concentration of Ni^{2+} is little and Co^{2+} is present in a great excess a check experiment is made with a purified Co^{2+} salt solution free of Ni; by this method 0.4° of Ni diluted 1 : 250,000 are discovered when Co is 3,700 times in excess. Also little amounts of Co^{2+} - 2.9 γ are discovered with the described columns with I, viz. when Co is diluted 1 : 34,500 and Ni^{2+} is 500 times in excess. A chromatogram of Ni^{2+} , Fe^{2+} and Co^{2+} was prepared.

Card 3/3

- 65 -

GURVICH, A. M. Cand Chem Sci -- (diss) "Chromatography in preparative chemistry of luminophores, and its physical and chemical bases." Mos, 1957. 11 pp 22 cm. (Mos State U im M. V. Lomonosov. Chemistry Faculty), 100 copies. (KL, 13-57, 97)

SOV/137-58-9-18822

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 9, p 95 (USSR)

AUTHORS: Guryich, A.M., Gapon, T.B.

TITLE: Prospects for the Utilization of the Adsorption-complex-forming Method of Chromatography to Purify Solutions in Zinc Hydrometallurgy (Perspektivy primeneniya adsorbtsionno-kompleksoobrazovatel'nogo khromatograficheskogo metoda dlya ochistki rastvorov v gidrometallurgii tsinka)

PERIODICAL: V sb.: Materialy Soveshchaniya po primeneniyu ionnogo obmena v tsvetn. metallurgii. Moscow, 1957, pp 91-101

ABSTRACT: An examination is made of the possibility of employing a chromatographic method of purifying solutions of $ZnSO_4$ and $CdSO_4$ in columns containing carbon and dimethylglyoxime and carbon and α -nitroso - β -naphthol. Removal of Ni, Co, Cu, and Fe from the solutions results from the fixing of these cations by dimethylglyoxime (or α -nitroso - β -naphthol) in stable complexes adsorbed by carbon. The mixture of dimethylglyoxime and coal is prepared in a 1:10 ratio. Each gram of this sorbent is capable of removing the Fe, Cu, and Ni from

Card 1/2 250 g $CdSO_4 \cdot 8/3 H_2O$ and > 600 g $ZnSO_4 \cdot 7H_2O$. The working

SOV/137-58-9-18822

Prospects for the Utilization of the Adsorption-complex-forming (cont.)

capacity of a carbon and α -nitroso- β -naphthol column is only one-half that of a carbon and dimethylglyoxime column. Preliminary investigations have established the optimum rate of filtration (when the coal is reduced to grains 0.2-0.5 mm in cross section) to be ~ 150 cc/hr through 1 cm^2 cross section of carbon and dimethylglyoxime column. During the purification process the pH of the solution is held at 5.8-6 by means of an acetate buffer. A purified 10-12% ZnSO_4 solution contained $< 10^{-6}\%$ Cu, $2-4 \cdot 10^{-5}\%$ Fe, and no Ni and and Co discernible by chemical analysis.

N.P.

1. Cadmium sulfates--Purification
2. Zinc sulfates--Purification
3. Nickel --Separation
4. Copper--Separation
5. Cobalt--Separation

Card 2/2

08/10/2001

CIA-RDP86-00513R000617510015-5"

GURVICH

A.M.

SUBJECT: USSR/Luminescence

AUTHORS:

Gurvich A.M., Gapon T.B and Rabinovich M.S.
Chromatographic Methods of Purifying Raw Materials Used for
Synthesis of Luminophores (Khromatograficheskiye metody
ochistki syr'ya, primenyayemogo v sinteze lyuminoforov)

TITLE:

PERIODICAL:

Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, 1957,
Vol 21, #5, pp 656-660 (USSR)

ABSTRACT:

Aluminum oxide yields satisfactory results as a chromatographic adsorbent in purifying CdSO_4 and salts of other cations (possessing a lesser ability of sorption on Al_2O_3 than Cd^{2+}). A solution of zinc sulfate can be purified from copper traces by filtering through a column containing ZnS in a mixture with Al_2O_3 . Especially good results were obtained by filtering solutions to be purified through a column containing dimethyl-glyoxime. Using this method, salts of cadmium, alkali and alkali-earth metals can be purified from Cu, Fe, Ni and Co up to a high degree of purity, which practically does not depend on

Card 1/2

TITLE:

40-54705
Chromatographic Methods of Purifying Raw Materials Used for
Synthesis of Luminophores (Khromatograficheskiye metody
ochistki syr'ya, primenyayemogo v sinteze lyuminoforov)
initial concentrations of admixtures.

This report and two preceding ones were followed by a common
discussion in which Markovskiy L.Ya. of the State Institute
of Applied Chemistry communicated that the Institute com-
pared all 3 methods and came to a conclusion that the method
of using diethyl-dithio-carbamate has the best prospect.

1 Russian reference is cited.

INSTITUTION: Chemico-Pharmaceutical Plant im. Semashko; Institute of
Physical Chemistry of the USSR Academy of Sciences.

PRESENTED BY:

SUBMITTED: No date indicated

AVAILABLE: At the Library of Congress.

Card 2/2

Gurvich, A.M.

32-7-21/49

AUTHOR: Gurvich, A.M.

TITLE: On the Determination of the Granulometric Composition of Polydispersive Crystal Powders
(K opredeleniyugranulometricheskogo sostava polidispersnykh kristallicheskikh poroshkov)

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 7, pp. 827 - 827 (USSR)

ABSTRACT: Measuring granular distribution of these crystal powders is carried out in a transparent film under a microscope. The preparation film is produced by applying the powder solution onto a plane glass- or metal surface. After having been dried thoroughly, it is then placed upon a microscope table and measured at from three or four places. As an example measuring on an artificially produced scheelite was carried out.

Card 1/2

32-7-21/49

On the Determination of the Granulometric Composition of Polydispersive Crystal
Powders

ASSOCIATION: Moscow Chemical-Pharmaceutical Plant imeni N.A. Semashko
(Moskovskiy khimiko-farmatsevticheskiy zavod im. N.A. Semashko)

AVAILABLE: Library of Congress

Card 2/2

GURVICH, A.M.

AUTHORS: Gurvich, A. M., Gapon, T. B.

32-9-4/43

TITLE: Adsorption-Complex Forming Chromatographical Method of Metal Separation (Adsorbtsionno-kompleksoobrazovatel'nyy khromatograficheskiy method razdeleniya metallov)

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 9, pp.1037-1042 (USSR)

ABSTRACT: By exchanging the inert carrier with an adsorbent, which is able to retain the complex forming of the reagent and the products from its reaction with the metal-cations, the authors succeeded in extending the application possibilities for such reagents in the chromatography. Especially promising is in their opinion the application of columns from activated carbon which contain an organic complex forming reagent well adsorbing in the carbon, e.g. dimethyl glyoxime, α -nitroso- β -naphthol or ortho-hydroxyquinoline. The bottom layer of such columns only consists of activated carbon. The organic reagent and its metal-compounds are retained in the column by the carbon. This makes it possible to separate the cations. These together with the respective reagent form compounds soluble in water as well as insoluble compounds, where the reagent does not penetrate into the filtrate neither in free condition nor in the form of a compound. The possibilities of separating metal is determined by the distinctness of the unsolidity constants of its complex-compounds with the organic reagent.

Card 1/2

Adsorption -Complex Forming Chromatographical Method of Metal Separation. 32-9-4/43

That cation which forms the least solid complex is the first to enter the filtrate. It is referred to the fact, when investigating the processes occurring in the adsorption-complex forming columns, a number of interesting data on the properties of the organic reagents, on the structure and stability of the compounds formed by them with the metals, on formation of compounds which formerly couldnot be ascertained, can be obtained. It is demonstrated that the method here described can be applied for the solution of the most different problems of preparatory, analytical and physical-chemical character. There are 2 tables, 2 figures and 16 references, 13 of which are Slavic.

ASSOCIATION: Institute for Physical Chemistry AN USSR and Institute for Radiology(Institut fizicheskoy Khimii AN SSSR i Institut rentgenologii)

AVAILABLE: Library of Congress

Card 2/2

447

AUTHOR: Gurvich, A. M.

TITLE: Employment of Chromatography for the Study of Reactions of Dimethylglyoxime with Metal Cations. Part 1 (Primeneniye khromatografii k izucheniyu reaktsiy dimetilglioksima s kationami metallov. I.)

PERIODICAL: Zhurnal Obshchey Khimii, 1957, Vol. 27, No. 1, pp. 40-45 (U.S.S.R.)

ABSTRACT: The author developed a new method for studying the complex formation reactions between metal cations and organic reagents which are weak, poorly water-soluble acids. The method consists in chromatographic separation of the acid forming during the reaction from the complex compound and is based on the different carbon adsorption nature of non-electrolytes in strong electrolytes and the actual adsorption nature of strong mineral acids. It is known that a strong mineral acid adsorbed from an aqueous solution with carbon activated at high temperature cannot be completely desorbed by the water even at boiling points. The adsorption irreversibility of a strong acid with active carbon according to the surface oxide theory of Shilov and Chmutov (16) and the gas electrode theory of Frumkin and associates (17) is explained by the reaction of the

Card 1/3

447

Employment of Chromatography for the Study of Reactions
of Dimethylglyoxime with Metal Cations. Part 1.

H⁺-ion with the hydroxy l groups of a double electric layer formed on the surface of the carbon immersed in water. By saturating the active carbon with hydrochloric acid and washing the molecular adsorbed acid with water, the carbon is made almost incapable of irreversible adsorption of acid. An analysis of results shown in the table indicates that during the reaction between H₂Dm and Ni⁺⁺, Cu⁺⁺, Co⁺⁺, and Fe⁺⁺ taking place in a chromatographic carbon-dimethylglyoxime column, about one milliequivalent of H⁺-ion is being formed per milliequivalent of cation which enters into reaction. The reaction product in this case is a compound of general formula Me(HDm)₂. The fact determining the reaction in the column is the apparent adsorption by carbon of ME(HDm)₂ and not H₂Dm. The more complete reaction between Co⁺⁺ and H₂Dm adsorbed on the carbon is explained by the increase in contact area of the reagents and by the increase in reactivity of H₂Dm in adsorbed state. One table. There are 25 references, of which 16 are Slavic.

Card 2/3

ASSOCIATION: Academy of Sciences of the USSR, Institute of Physical Chemistry ⁴⁴⁷
(Institut Fizicheskoy Khimii Akademii Nauk SSSR)

PRESENTED BY:

SUBMITTED: January 30, 1956

AVAILABLE:

Card 3/3

AUTHOR: Gurvich, A. M.

79-2-8/58

TITLE: Application of Chromatography to the Study of Reactions between Dimethylglyoxime and Metal Cations. Part 2. (Primeneniye Khromatografii k izucheniyu reaktsiy dimetilglioksima s kationami metallov. II.)

PERIODICAL: Zhurnal Obshchey Khimii, 1957, vol 27, No 2, pp. 316-321 (U.S.S.R.)

ABSTRACT: A new method was developed to determine the relative stability of monotypic complex metal compounds with a well-adsorbing carbon base organic reagent. The cleavage of conjugate mixtures of equinormal Ni^{++} , Co^{++} , Cu^{++} , and Fe^{++} salt solutions was investigated. No less than two experiments were made for each pair of cations. It was found that in a carbon-dimethylglyoxime column the cations (mentioned above) form compounds of the general formula $Me(HDm)_2$. It became evident that, of a mixture of two cations, the first one will react with the H_2Dm forming the upper zone of the chromatogram. This was the (Me_1) cation which at any other equal conditions produces a compound characterized by a low magnitude of the instability constant. The order of the metal passing

Card 1/2

79-2-8/58

Application of Chromatography to the Study of Reactions between Dimethylglyoxime and Metal Cations. II.

into the filtrate during a frontal chromatographic analysis of the aqueous solutions of their salts on columns was determined. The complex form of the chromatogram is in some cases explained by the comparatively low solubility of the compounds being formed in the column.

It was established that the metals can be arranged in the order of the decreasing stability of their intracomplex compounds with dimethylglyoxime of the general formulas $Me(HDm)_2$.

1 table, 1 graph. There are 22 references, of which 16 are Slavic

ASSOCIATION: USSR Academy of Sciences, Institute of Physical Chemistry

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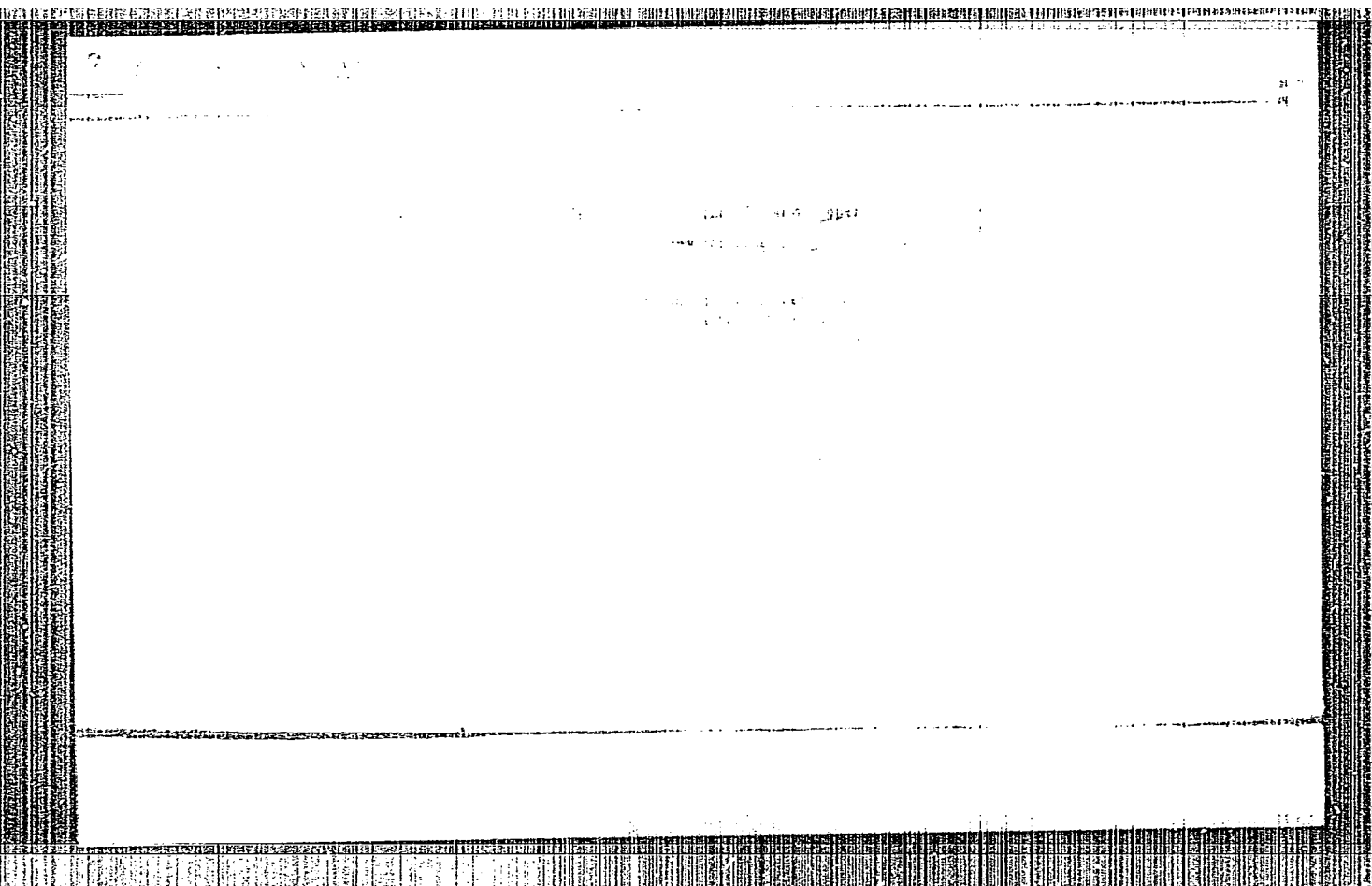
SUBMITTED: January 30, 1956

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APPROVED FOR RELEASE: 08/10/2001

CIA-RDP86-00513R000617510015-5"

AUTHOR: Gurvich, A. M.

807/76-32-7-22/45

TITLE: ~~The Investigation of the Interaction Between Aqueous Electro-~~
lyte Solutions and Aluminum and Zinc Oxides by the Method
of Frontal Chromatographic Analysis (Izucheniye vzaimodeyst-
viya vodnykh rastvorov elektrolitov s okis'yu alyuminiya i
okis'yu tsinka metodom frontal'nogo khromatograficheskogo
analiza)

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol 32, Nr 7, pp.1597-1604
(USSR)

ABSTRACT: Among the investigations employed for the explanation of the
chromatographic distribution of the cations on aluminum oxide
the author mentions the publications by Fisher, Umland and
Kulling (Fischer, Umland and Kulling) (Refs 13-16) and Dans
et al. (D'ans et al.) (Refs 17, 18), as well as Shwab (Schwab)
Ref 5), T. B. Gapon and Ye. N. Gapon (Ref 9), Schwab and
Issidoridis (Refs 19, 20), Gayvek and Lorents (Hayek and
Lorenz) (Ref 21) and Frike et al. (Fricke et al.) (Ref 22).
Several opinions exist concerning the mechanism of the salt
hydrolysis in chromatography, e.g. of Sakhoni (Sacconi) (Ref 24),
Shpeker and Khartkamp (Specker and Hartkamp) (Ref 29). On the

Card 1 4

SOV/76-32-7-22/45

The Investigation of the Interaction Between Aqueous Electrolyte Solutions and Aluminum and Zinc Oxides by the Method of Frontal Chromatographic Analysis

other hand the experimental data do not agree with one another either, e.g. those obtained by Ye. M. Gapon et al. (Ref 34) and those by Fricke et al. (Ref 22); this fact may be explained by the transformation of Al_2O_3 in the thermal treatment. A domestic aluminum oxide was used for the "chromatography" in the present investigations of salt solutions of $CuSO_4$, $CuCl_2$, $ZnSO_4$ and $CoCl_2$. Parallel to this determinations with zinc oxide as sorbent were carried out. From the experimental results may be seen that the role played by sodium ions in the salt adsorption on aluminum oxide is small, and the displacement of Al^{3+} from Al_2O_3 is of no importance. In agreement with the paper by L. K. Lepin' (Ref 40) it is found that a chemisorption takes place on zinc oxide while a surface process takes place on aluminum oxide. In connection with the theory by Shilov and Chmutov (Refs 41-43) it is assumed that on the aluminum surface a formation of hydroxyl groups takes place, with the salt being irreversibly adsorbed by the hydrated surface. The data supplied by Fisher and Kulling (Ref 15) on a desorption of salts were not substantiated and the sorption discovered at relatively high temperature on annealed Al_2O_3

Card 2/4

SOV/76-32-7-22/45

The Investigation of the Interaction Between Aqueous Electrolyte Solutions and Aluminum and Zinc Oxides by the Method of Frontal Chromatographic Analysis

is explained by the aluminate-bound sodium. The investigations and by T. B. Gapov and Ye. N. Gapov (Ref 8) and those by Siewert and Jungnickel (Siewert and Jungnickel) (Ref 45) also point to this fact. In the case of zinc oxide the transition of the Zn^{2+} ions into solution is effected by the participation of lower layers in the hydrolysis process, in consequence of which fact the purification of the zinc salts from copper takes place much more complete on ZnO than on aluminum oxide columns. There are 3 figures and 45 references, 18 of which are Soviet.

ASSOCIATION: Akademiya nauk SSSR, Institut fizicheskoy khimii, Moskva; Khimiko-farmatsyevicheskiy zavod im. Semashko, Moskva; (Moscow Institute of Physical Chemistry, AS USSR; Moscow, Chemical and Pharmaceutical Factory imeni Semashko)

SUBMITTED: March 14, 1957
Card 3/4

5 (4)

AUTHOR:

Gurvich, A. M.

SOV/76 33-7-5/40

TITLE:

On the Dependence of the Working Capacity of a Chromatographic Aluminum Oxide Column on the Content of Impurities of the Salt to Be Purified in the Column

PERIODICAL:

Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 7, pp 1473 - 1476 (USSR)

ABSTRACT:

If two kinds of ions are simultaneously adsorbed in a chromatographic column (CC), the concentration of the ions to be separated influences the working capacity (WC) of the (CC) in addition to other factors. This effect becomes particularly evident in those cases in which one of the ions is present in a smaller concentration (with respect to the other ion). The variation in the (WC) of an Al_2O_3 (CC) was investigated here under these conditions during the separation of copper from cadmium sulphate, i.e. in such a manner that the filtrate contained less than $1 \cdot 10^{-9}$ g Cu/ml approximately (colorimetrically determined) (Ref 1). The data obtained are important to the synthesis of luminophores from extremely pure CdS preparations.

Card 1/2

On the Dependence of the Working Capacity of a Chromatographic Aluminum Oxide Column on the Content of Impurities of the Salt to Be Purified in the Column

SOV/76-33-7-5/40

The copper concentration in the cadmium sulphate solution ($135 \text{ g CdSO}_4/\text{l}$) was changed within the range $0.02 - 0.00005 \text{ g}$ equivalent/ml. The two experimental series showed that the dependence of the (WC) of the (CC) on the copper concentration in the solution (at a constant concentration of cadmium sulphate) can be represented by a modified Langmuir equation (1). The author shows that the solution volume, which can be purified from copper per 1 g of sorbent, does not depend on the copper concentration in the initial solution of the copper concentration in the latter does not exceed the standard for the degree of purity of "chemically pure" cadmium sulphate (Ref 10). There are 1 figure and 11 references, 10 of which are Soviet.

ASSOCIATION: Ministerstvo zdravookhraneniya RSFSR (RSFSR Ministry of Hygiene). Nauchno-issledovatel'skiy institut rentgenologii i radiologii (Scientific Research Institute of Radiography and Radiology)

SUBMITTED: August 17, 1957
Card 2/2

S/030/60/000/010/005/018
B021/B058

AUTHORS: Gapon, T.B., Gurvich, A. M., Chmutov, K. V.

TITLE: Adsorption-[↑]complex-forming Chromatographic Method

PERIODICAL: Vestnik Akademii nauk SSSR, 1960, No. 10, pp. 58-60

TEXT: A short definition of the principle of chromatography is given. The elaboration of sedimentary chromatography based on the differences of the solubility of sediments formed by the materials to be separated with the precipitator-reagent, constitutes a great progress. The replacement of the inert carrier of the column by an adsorbent such as active carbon opens good prospects. The separation of metals in columns is mainly based on the different capabilities of the cations to form complexes with the given reagents, and on the stability of the complexes being formed. Of all variants of chromatographic purification of the raw material for luminophors, the method of using adsorption-complex-forming columns is the most suitable one for industry, since it is simple, effective, safe and economic. Mixtures of materials with very similar properties can be separated by this

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Card 1/2